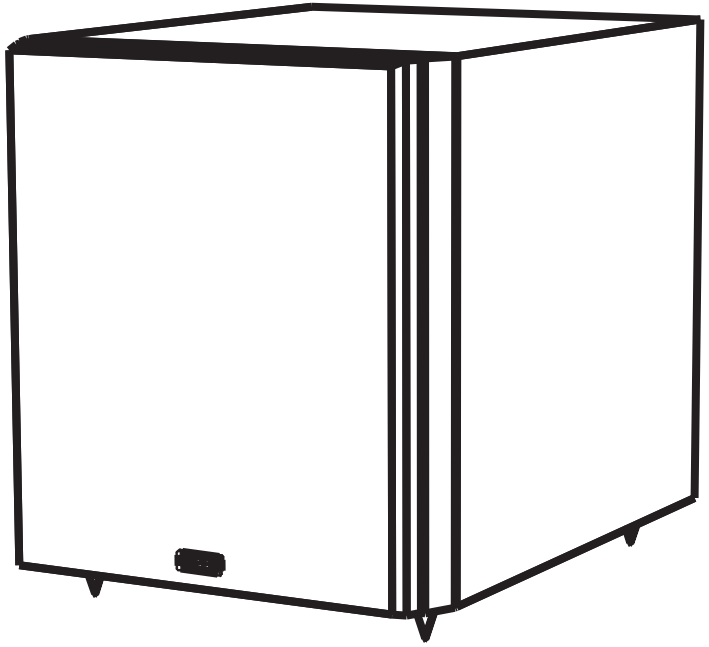
epos
epos
epos
epos
epos
epos
epos



ELS Active Subwoofer

Instruction Manual

Important Safety Precautions

ELS *Sub*

Thank you for purchasing Epos Loudspeakers. Please take a little time to read these brief notes, which will help you get the best results from your loudspeaker.

This Subwoofer comes complete with the following items:
(Should anything be missing, please contact your dealer/supplier).

1x EPOS ELS SUBWOOFER (Including Detachable Grill).
4x EPOS SPIKES (Including any relevant fixings).
2x POWER CABLES (See text in the Warning section).

CONTENTS:

Important Safety Precautions.....**2&3**

Getting Started.....**4**

Subwoofer Controls.....**5&6**

Subwoofer Performance & Specifications.....**7&8**

Troubleshooting and Warranty.....**9**

WARNING

For safety reasons please read the following instructions and the enclosed Important Safety Information *carefully* before attempting to connect your Epos ELS Subwoofer to the mains.

The ELS Sub is not designed for permanent external use. Being a powered product it would be damaged by rain water or other contaminants entering into the amplifier via the vent holes and the wooden cabinet would be damaged if soaked with water.

As with all electrical products, make sure the correct mains voltage is selected by the two way selector switch on the rear panel marked AC Voltage Selector. If you are in any doubt, contact your supplier for advice. As a general rule, the amplifier cannot be damaged by supplying lower voltages than marked on the switch panel, but excessive voltage will cause the mains fuse to blow or possibly even damage the internal circuitry (if in doubt, ask your dealer/supplier).

Two power cords are supplied as standard with the ELS Sub, which have the international IEC connector for plugging into the amplifier panel at one end and either of two styles of plug at the other end.

USA, Canada and Japan - The USA style plug with two flat blades should be used with the voltage selector switched to 115V operation and a mains fuse rated at 4 Amp inserted in the pull-out drawer.

Europe - The two round pin Euro plug should be used with the AC Voltage selector switched to 230V.

UK, Hong Kong - 3 Pin UK Plugs will be supplied separately by your dealer/supplier. Please check if in doubt.

Important Safety Precautions

CAUTION

To reduce the risk of electric shock, do not remove the rear panel. There are no user-serviceable parts inside. Please refer all servicing to a qualified engineer.

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important safety information featured within this instruction manual.

VENTILATION

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface.

This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.

SAFETY PRECAUTIONS

Read Instructions - All the safety and operating instructions should be read before the product is operated

Retain Instructions - The safety and operating instructions should be retained for future reference.

Heed Warnings - All warnings on the product and the operating instructions should be adhered to.

Follow instructions - All operating and use instructions should be followed.

Cleaning - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

UNPACKING

The ELS Sub is heavy. (20Kgs/44lbs) Do not try to lift or carry it around alone. Two people are required to lift it so please be careful. Get help from a family member or friend if this product is not installed by a professional person.

The best way to remove the speaker from the carton is to open the top of the carton, roll it over with the flaps folded out and pull the carton off, leaving the speaker in its protective polyethylene foam. Pull one foam frame off at a time and lower the speaker to the floor carefully. Remove the poly bag and keep it out of the hands of children and babies as it can cause suffocation.

Getting Started

OVERVIEW

The Epos ELS Sub is an active loudspeaker. In other words, that means that it has an in-built power amplifier to boost the signal level. Therefore, there is no need for an external power amplifier to drive it. In addition, the ELS Sub has a complex filter circuit which boosts sub-sonic frequencies and is adjustable to allow it to be matched to different room sizes, shapes and user requirements. The rear panel controls provide a range of adjustment for this purpose.

The ELS Sub is designed to extend the low frequency response of both 2 channel and multi-channel systems, which demand very different tonal balance. This is described later, but control adjustment and placement in the listening room is important, so please read these instructions carefully for best results.

QUALITY

The ELS Sub has a massive and powerful 10” loudspeaker driver, with enough magnet strength and voice coil size to handle very high power levels for long periods without distress. Its cone diaphragm is very stiff to keep distortion and colouration to a minimum. The rubber suspension surround is smaller than normal and quite stiff, which also helps to reduce distortion and low frequency over-hang. In short it has been designed to be more appropriate for a two channel bass unit than a conventional sub-woofer.

To further boost the fidelity of the ELS Sub, it has a very stiff cabinet with extensive internal bracing, which is rarely found in conventional subwoofers and has a completely separate section at the back of the cabinet to house the amplifier, which is more normally found in professional speakers and not found in conventional subwoofer at any price.

To further improve the sound quality Epos does not use port tuning to achieve increased bass extension, which avoids 'chuffing' air turbulence noises interfering with the fidelity of the speaker.

In short, the ELS Sub is very unusual and can be used to good effect to extend the frequency response of a stereo system of any quality or price.

INSTALLATION AND SETUP

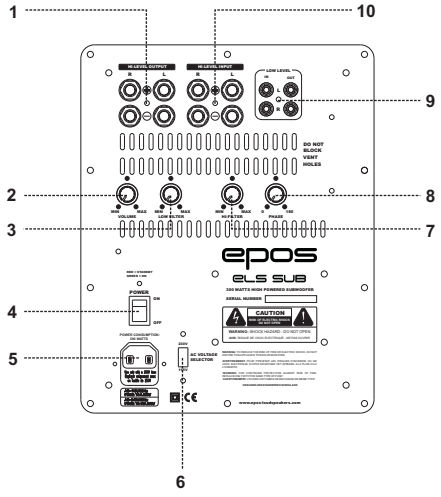
Having established which power cord to use, select the correct mains voltage for your region with the selector switch on the back panel. (If in doubt, please read Page 2 again or ask your supplying dealer for advice). ***If neither of the two cords are correct for your mains supply socket, do not proceed until you have contacted your dealer for advice or assistance.***

Positioning the subwoofer is important if the best results are to be achieved. Place the sub where it can be connected easily to the mains power supply and to the output of the receiver or amplifier used for the rest of your system. Needless to say, this would normally be at the front of the system, but be prepared to move it around the room to gain the best results.

Find the best position before mounting it on its spiked feet. Once this is done, screw the feet which are supplied in the accessory pack into the screw inserts in the bottom of the cabinet and adjust the height of each to make it level and tighten the locking nuts to secure them and prevent rattling. Allow room to make adjustments and to see the controls. The mains supply can be left connected as it has a low current standby condition which is enabled when no signal is present for a short while.

In the case of multi-channel system (5.1), connect a shielded cable from the sub-sonic output of your receiver and connect it to the RCA sockets on the back of the ELS Sub marked low level input. You will notice that there are two low level input sockets, marked **L** and **R**, which allows for a stereo signal. It can be necessary to join these together with a RCA combiner, supplied with the accessory pack if you find the source signal level is not enough to drive the ELS Sub to maximum power level.

Set all the controls to the middle position and switch on the ELS Sub using the switch marked **POWER**. Above the switch is a small LED indicator which will light if everything is OK. Red is the standby condition and green is the colour for normal operation.



Subwoofer Controls

You are now ready to set-up the system using the user guide or instructions from your receiver or DVD player. The sound balance can be adjusted with the controls on the back panel.

1. High Level Input
If your amplification system does not have a dedicated subwoofer line output, your subwoofer must be connected via the high level terminals on the rear panel. Connection should be made from the speaker terminals on your amplification system to the High Level Input Connections.

Note: To prevent damage to the amplifier, only connect using line level inputs OR high level inputs. ***DO NOT USE BOTH METHODS OF CONNECTION AT THE SAME TIME.***

2. Volume
This is self explanatory but it may be easier to set the output of the receiver or decoder to 0dB and then adjust the level of the sub to suit the room. Small adjustments can be more easily made with the receiver gain rather than jumping up and down to adjust the volume on the back of the ELS Sub.

3. Low Filter
Adjustment is necessary to extend or limit the low frequencies the sub is able to produce, so that it better matches your room acoustic and personal sound preference. Not everyone will appreciate the effect of sub-sonic movie effects. Even if you think they are great, please remember that low frequencies travel through walls much more easily than high frequencies, so please give a thought to neighbours or other family members who don't share your passion.

Subwoofer Controls

4. Power Switch
Turns the subwoofer 'ON' or 'OFF' (When left in the ON position without a signal allows the 'STANDBY' feature to become active).

5. IEC Socket (Mains)
Use this socket to connect to an appropriate mains socket via the IEC Power Cable supplied.

6. AC Voltage Selector Switch
Please ensure the AC Voltage selector is in the correct position. (See page 2).

7. High Filter
Adjustment is necessary to match the ELS Sub to the speakers you have chosen to use in the rest of your system. As all speakers have a different low frequency range, depending on their size and how many drivers they use, it will be necessary to adjust the upper cross-over point of the ELS Sub to seamlessly integrate with the output of the front and centre channel speakers which are not designed to provide sub-sonic bass. In addition the signal provided to these channels is frequency limited in the receiver or decoder.

8. Phase
Adjustment is necessary to properly integrate the output of the ELS Sub to match the respective phase of the front, centre and rear speakers in your 5.1 system. Phase describes the polarity of the sound waves travelling to your ears. Positive means moving forward and negative means moving back. If the sound from your front speakers is designed to be more positive at their low frequency extreme, it is necessary to adjust the output of the ELS Sub to be positive also, otherwise they will tend to cancel one another out and reduce the level or distort or colour the sound.
There is no simple measurement for this process, which should be done simply by trial and error. You will easily hear which setting best suits your system after you run it with a signal and adjust the **Phase** until you hear the most pleasing result.

9. Low Level Input
If your amplification system has a dedicated subwoofer output it should be connected to the line level input. If you have a mono connection from your amplifier you may use either connection.
The output sockets can be used if an additional subwoofer is to be added to your system.

Note: To prevent damage to the amplifier, only connect using high level inputs OR line level inputs. ***DO NOT USE BOTH METHODS OF CONNECTION AT THE SAME TIME.***

10. High level input
For systems that don't have line level or pre-amplifier outputs to provide a full bandwidth signal to the subwoofer to deal with, it is necessary to patch the front speakers through the sub's high level input sockets and out of the high level output sockets on to the front channel speakers. This cannot be recommended for the best fidelity as it will, needless to say, be taking a high level signal from a power amplifier and attenuating it inside the subwoofer to the level suitable to be amplified again by the subwoofer's amplifier. Always use the low level input for best results.

Subwoofer Performance

STEREO SYSTEMS

These tend to be difficult to integrate with conventional subwoofers because, for the most part, sub woofers are generally not designed to match them and suit 5.1 systems only. The Epos ELS Sub is different and was conceived as a means of extending the frequency response of a small pair of bookshelf speakers, rather than just producing large outputs at one particular frequency, such as 60 Hz.

This may appear to contradict established principles, but Epos engineers have not limited themselves to only trying to produce a product that plays 'one note' sound. For that reason the ELS Sub is capable of extending low frequencies with a relatively flat response down to 20 Hz. This is most unusual and would normally be unheard of in conventional woofers, because apart from anything else, their cabinets and amplifiers would rattle and buzz, due to the simple method of construction used.

OVER CURRENT CUTOUT

The ELS Sub does not use a compression limiter to pre-distort the signals it cannot handle, to prevent it from cutting out. No amplifier has infinite power capabilities and has to be protected from destroying itself under extreme conditions. To protect the ELS Sub's 300W amplifier from excessive current demands, it has been designed to cut the signal to the speaker in the event of an overload.

This will temporarily mute the subwoofer and stop it from working until the demand is lower. If the volume is reduced, the frequency range is altered to cut-off at a higher frequency or the passage containing the high level low frequency sound is passed, the sound output will be restored automatically.

OVER TEMPERATURE CUTOUT

To protect the amplifier from damage caused by excessive heat, there is a thermal sensor attached to the amplifier's heatsink that is set to trip the output if the internal temperature exceeds a pre-set level. If this happens, the ELS Sub will stop working until the temperature reduces to an acceptable level.

The reasons this might happen are high ambient room temperature, direct sunlight, high level operation for long periods and insufficient ventilation of the amplifier control panel.

POSITIONING AND TUNING

Remember that low frequencies have a longer wave length and sound waves travel to the ear in waves. So, it may be necessary to move your subwoofer to different positions to completely suit your requirement or taste. If you require more or less power at low frequencies, it can be affected by the proximity to an adjacent wall or boundary.

Each wall or boundary will further enforce the effect of the woofer so moving it closer or further away from a rear or side wall will change the sound effect dramatically. Corners double the effect as there are two boundaries.

The ELS Sub has been designed to match medium to small rooms, with an area of approximately 10-20 M^2 or 300-600 sq feet. If higher power or larger rooms are used, it may be necessary to increase the number of ELS Subs used in a single installation. The Low level output sockets make it easier to patch the signals through to a second or third ELS Sub, which can be placed elsewhere in the room.

Subwoofer Performance & Specifications

ELS *Sub*

SOUND PRESSURE LEVELS

It is very easy to get used to high sound pressure levels as the human brain compensates for the level by effectively reducing the perceived level the ear is receiving and allows the person to become used to higher and higher levels until the pain threshold is reached. It is therefore necessary to be aware of this and avoid reaching this sublime state before serious or permanent damage is caused to ones ears. ***Remember that hearing damage is irreversible as with all nerve damage.***

PROTECTIVE GRILLS

The ELS Sub has a 10”(254mm), bass driver loudspeaker fitted to the front of the cabinet. It is important not to block or restrict this area of the speaker or results will not be ideal. Some users may wish to remove the fabric grille, which covers the speaker. Care should be taken to avoid damage to the diaphragm or cone and rubber surround.

Children and some pets are fascinated with such things and damage can be caused by sharp objects coming into contact with the moving cone. ***The risk is yours.*** Removing the grille is possible by pulling on the frame, one corner at a time, until it un-plugs from the inserts in the front of the cabinet. Plug the frame back in to replace it. Remember that the frame is delicate and can be broken easily if not stored carefully away from the speaker.

HEIGHT ADJUSTABLE SPIKES

You can change the overall height positioning of your ELS Sub by adjusting the nuts supplied with the Epos Spikes.
Please ensure all spikes are even to maintain the stability of the Sub. ***(If in doubt, check with a Spirit Level).***

SPECIFICATIONS

Amplifier type
Class D, high efficiency switching circuit.

Amplifier power output
300Watts into 4 Ohm load continuous

Frequency response of system
20Hz to 150Hz with high and low filter settings at max and min.

Speaker impedance
4 Ohms

Sensitivity
89dB per Watt

Maximum system output SPL
112dB at 1 metre for music program

Amplifier capability
300 Watts into 4 Ohms continuous
500 Watts peak

Bass driver
10” (254mm) steel chassis with reinforced paper cone and inverted dust cover. 3” (75mm) high temperature voice coil wound on an aluminium former with high power ceramic magnet system. This product is not magnetically shielded, so avoid placing it in proximity to a CRT television or computer monitor screen.

Troubleshooting and Warranty

Filter compensation circuit
Multi-element, bi-quadratic, high and low-pass filters with adjustable phase and active gain control

Cabinet
Vinyl wrapped, 25mm MDF carcass with internal cross bracing to form a very rigid and sonically dead structure. Double thickness front baffle and separate back panel to house the amplifier in its own independent cavity.

Dimensions
Height:372mm **x Width:**342mm **x Length:**450mm

Weight
20Kgs/44lbs

TROUBLESHOOTING GUIDE

THERE IS NO POWER
Ensure that the IEC Power cable is connected securely.
Ensure that the plug is fully inserted into the wall socket and is switched on.
Check the fuse in the IEC Power Cable and subwoofer.

THERE IS NO SOUND
Ensure that the amplifier is set correctly.
Check that the interconnects are inserted correctly.

THERE IS A HUM COMING FROM THE SUBWOOFER
Ensure that all cable connections are secure.

WARRANTY

Your Epos subwoofer has been built to very high standard and should give many years of trouble free use.

If within 2 years of the purchase date it proves to be defective for any reason other than accident, misuse, neglect, unauthorized modification, or fair wear and tear, we will, at our discretion, replace the faulty parts without charge for labour or return carriage in the UK.

Your purchase invoice/receipt should be retained as it may be required in the event you need to claim on your warranty. This warranty is valid only in the United Kingdom and given in addition to your statutory rights.

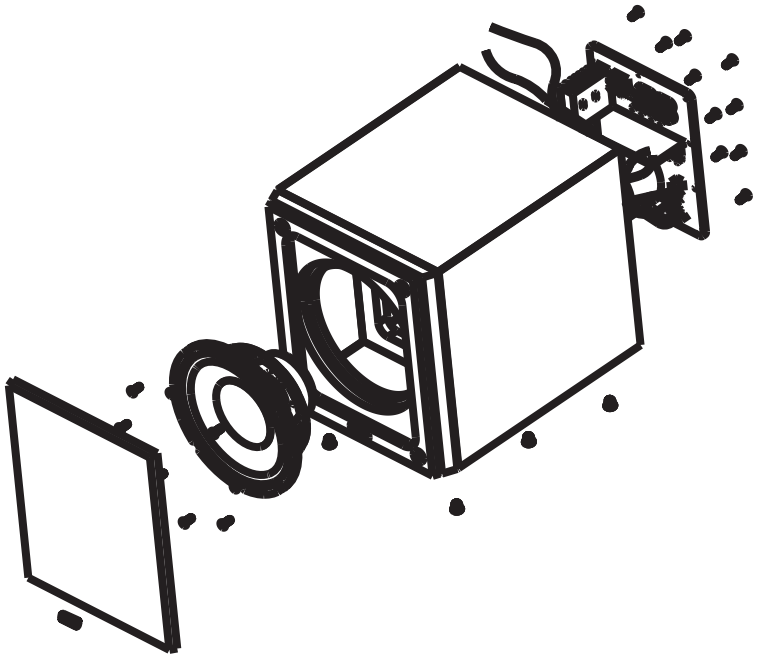
Service enquiries in countries outside the UK should be address first to the supplying dealer or Epos agent or importer and distributor. Warranties granted in these countries are entirely at the discretion of the agent or distributor. For a list of appointed distributors please check the EPOS Ltd website www.epos-acoustics.com or write to info@epos-acoustics.com

Epos Limited
12 Avebury Court,
Mark Road,
Hemel Hempstead,
Hertfordshire,
HP2 7TA,
England

Tel No.+44(0)1442 26 0146
Fax No.+44(0)1442 24 3766

epos

www.epos-acoustics.com



Epos Limited 12 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA, England
Tel No.+44(0)1442 26 0146 Fax No.+44(0)1442 24 3766

Made from recyclable material
Ref. EA014/R1